Chemetco, Inc. - March 3, 2009
Scrubber Sludge (Zinc Oxide) & Slag Analysis and Inventory

Note: The Bankruptcy Estate of Chemetco, Inc. does not guarantee or warrant the quantity, composition, or accuracy of the data presented. Interested parties can make arrangements to visit the smelter site and perform their own sampling and data collection.

	Scrubber Sludge/Zinc Oxide								Slag	
	Zn Oxide Bunker (Average)									
	Bunker (Concrete floor and 11' high concrete walls, open top used to store srubber sludge as a RCRA SWMU)		Bunker Cover (3) (mixture of scrubber sludge and slag placed on top of north end of bunker)		DIS Bldg (Average) Uncontaminated filter cake		Receiving Bldg (Average) (DIS filter cake package in supersacks for overseas shipmets that never occurred)		Slag (Average)	
Quantity, tons	33,000		7400		4000		200		900,000	
	Bulk		Mixed Media		Bulk		100-2ton Supersacks		Bulk	
	Results		Results		Results		Results		Results	
Analyte	ppm	%	ppm	%	ppm	%	ppm	%	ppm	%
Metals (primarily as Metal Oxides)										
Aluminum	34762	3.48%	27809	2.78%	11771	1.18%	11771	1.18%	26531	2.65%
Antimony	461	0.05%	369	0.04%	916	0.09%	916	0.09%	85	0.01%
Arsenic	140	0.01%	112	0.01%	271	0.03%	271	0.03%	6	0.00%
Barium	1010	0.10%	808	0.08%	2522	0.25%	2522	0.25%	763	0.08%
Bismuth	0	0.00%	0	0.00%	2	0.00%	2	0.00%	2	0.00%
Cadmium	2343	0.23%	1874	0.19%	5350	0.54%	5350	0.54%	1	0.00%
Calcium	38213	3.82%	30570	3.06%	8695	0.87%	8695	0.87%	14899	1.49%
Chromium	177	0.02%	141	0.01%	199	0.02%	199	0.02%	2757	0.28%
Cobalt	67	0.01%	54	0.01%	60	0.01%	60	0.01%	177	0.02%
Copper	69518	6.95%	55614	5.56%	92798	9.28%	92798	9.28%	17104	1.71%
Iron	48759	4.88%	39007	3.90%	41617	4.16%	41617	4.16%	358502	35.85%
Lanthanum	10	0.00%	8	0.00%	61	0.01%	61	0.01%	17	0.00%
Lead	80378	8.04%	64303	6.43%	102698	10.27%	102698	10.27%	17320	1.73%
Magnesium	7631	0.76%	6105	0.61%	3158	0.32%	3158	0.32%	8027	0.80%
Manganese	1377	0.14%	1102	0.11%	827	0.08%	827	0.08%	3513	0.35%
Mercury	0	0.00%	0	0.00%	3	0.00%	3	0.00%	3	0.00%
Molybdenum	21	0.00%	16	0.00%	158	0.02%	158	0.02%	99	0.01%
Nickel	4403	0.44%	3523	0.35%	2399	0.24%	2399	0.24%	1796	0.18%
Phosphorus	1063	0.11%	850	0.09%	842	0.08%	842	0.08%	1725	0.17%
Potassium	5677	0.57%	4542	0.45%	1281	0.13%	1281	0.13%	1957	0.20%
Scandium	3	0.00%	2	0.00%	1	0.00%	1	0.00%	1	0.00%
Silver	70	0.01%	56	0.01%	120	0.01%	120	0.01%	3	0.00%
Sodium	16773	1.68%	13419	1.34%	30903	3.09%	30903	3.09%	7046	0.70%
Strontium	109	0.01%	87	0.01%	88	0.01%	88	0.01%	238	0.02%
Thallium	0	0.00%	0	0.00%	2	0.00%	2	0.00%	2	0.00%
Tin	8239	0.82%	6591	0.66%	19800	1.98%	19800	1.98%	5480	0.55%
Titanium	1266	0.13%	1013	0.10%	399	0.04%	399	0.04%	747	0.07%
Tungsten	262	0.03%	209	0.02%	721	0.07%	721	0.07%	5	0.00%
Vanadium	32	0.00%	26	0.00%	11	0.00%	11	0.00%	51	0.01%
Zinc	205702	20.57%	164562	16.46%	199169	19.92%	199169	19.92%	106344	10.63%
Total Metals (Dry Basis)	528465	52.85%	422772	42.28% (2)	526842	52.68%	526842	52.68%	575198	57.52%
Balance (estimated)										
Silica	60000	6.00%		0.00%	60000	6.00%	60000	6.00%	143799	14.38%
Oxides, Carbonates, et al	169109	16.91%		0.00%	168589	16.86%	168589	16.86%	235326	23.53%
Soil + Slag + Debris	79270	7.93% (1)	577228	57.72%		0.00%		0.00%		0.00%
Unaccounted (by difference)	163157	16.32%		0.00%	244569	24.46%	244569	24.46%	45677	4.57%
Total Compounds (Dry Basis	1000000	100.00%	1000000	100.00%	1000000	100.00%	1000000	100.00%	1000000	100.00%
Moisture Content	30-40%		<5%		10-15%		10-15%		<5%	

Notes:
(1) Bunker contains approximately 10% soil
(2) Bunker Cover on north end contains approximately 42% Scrubber Sludge, with rest being Slag and Slag fines and some scrap metal, soil, and concrete debris
(3) Bunker Cover contains approximately 58% Slag

Estate Environmental
Info - Slag + Sludge

Original five SWMUs required by 1988 Consent Order to have RCRA Closure

TABLE 1
RCRA DISPOSAL UNITS, SOLID WASTE MANAGEMENT UNITS (SWMUs)
(APPLIES ONLY TO 41 ACRE SMELTER SITE)

No.	Issue	Regulatory Concern	Size/Description	Contents/Contamination	Action/Comment
1	Zinc Oxide Lagoons	RCRA Disposal Unit	Four earthen lagoons lined with slag., each approx. 50 ft W x 150 ft L x 5 ft D	Former cooling water lagoons contaminated with lead and cadmium from contact with scrubber sludge runoff and slag lining. Currently contains contaminated stormwater, approx. 1 to 3 M gallons, depending on season.	RCRA Closure
2	Cooling Water Canals (along north and east boundaries)	RCRA Disposal Unit	Two earthen canals, each approx. 30 ft W x 3,600 ft L x 15 ft D	Former cooling water canals contaminated with lead and cadmium from scrubber sludge runoff. Filled with slag.	RCRA Closure
3	Floor Wash Impoundment	RCRA Disposal Unit	Earthen pit filled with slag, approx. 150 ft by 100 ft	Former electrolytic cell wash water containment contaminated with lead, cadmium and acids. Filled with slag. Source of purged water contamination in SIDS area to the south.	RCRA Closure
4	Zinc Oxide Pit	RCRA Disposal Unit	50 ft W x 80 ft L x 15 ft D	Former scrubber sludge containment contaminated with lead and cadmium. Filled with slag.	RCRA Closure
5	Zinc Oxide Bunker	RCRA Disposal Unit/Hazardous Waste	Concrete lined storage bunker (open top): 350 ft W x 325 ft L x 11 ft H or approx. 2.5 acres	Former RCRA Disposal Unit for scrubber sludge, soild, and slag from cleanup of above RCRA Disposal Units.	IEPA appears to be amenable to recycling/recovery of contents if viable commercial use can be demonstrated. and/or RCRA Closure

UESPE Region V performed field surface sampling and analysis of multiple waste streams and areas of the Chemetco property in 1998. Table 2 below contains listing of a potential additional SWMU identified on the smelter site (others were identified but are not on the smelter site) based on these reports:

TABLE 2
POTENTIAL RCRA DISPOSAL UNITS, SOLID WASTE MANAGEMENT UNITS (SWMUs)
(APPLIES ONLY TO THE 41 ACRE SMELTER SITE)

No.	Issue	Regulatory Concern	Size/Description	Contents/Contamination	Action/Comment
6	Slag Piles	Potential RCRA Disposal Unit/Hazardous Waste.	Slag piles cover approx. 30% of the site or 17+ acres	**Contents:** Approx. 900,000 tons of slag on surface of site (See volume survey, Appendix A). **Contamination:** Slag is the largest source of contamination on the site. The lead and cadmium in slag is viewed as a potential contaminant of soils and groundwater beneath slag piles.	IEPA is amenable to recycling/ recovery of slag if viable commercial use can be demonstrated, IEPA approves Work Plan, and work does not contribute to additional contamination of the site. otherwise IEPA considers slag to be a hazardous waste that must be disposed in a RCRA approved landfill (IEPA does not favor on-site landfills but has approved them for similar situations, e.g., Alton Steel.).
7	Black Acid Tank	RCRA Disposal Unit/Hazardous Waste	Approx. 0.5 acre under tank and east end of Tank House	Tank and soils potentially impacted by electrolytic cell waste acid containing lead, cadmium and other metals and acids.	RCRA Closure
8	Polish Pits	Potential RCRA Disposal Unit/Hazardous Waste.	1-100,000 gal concrete lined basin 1-75,000 gal concrete lined basin	Former scrubber sludge containments. Large basin contains approx. 562 tons of scrubber sludge and approx. 10,000 gal of contaminated stormwater. Small basin contains approx. 20,000 gal of contaminated stormwater.	RCRA Closure